



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inter Patent Application of:

Soheil SHAMS *et al.*

Serial No.: 10/761,938

Filed: January 21, 2004

) Docket No.: 016472-0311710  
)  
) Confirmation No.: 2161  
)  
) Examiner: Abolfazl Tabatabai  
)  
) Group Art Unit: 2625

For: SYSTEM AND METHOD FOR AUTOMATICALLY PROCESSING MICROARRAYS

**INFORMATION DISCLOSURE STATEMENT (IDS)**

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicants hereby make of record in the above-identified application the documents listed on the attached Form PTO-1449.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated. Where the publication date of a listed document does not provide a month of publication, the year of publication of the listed document is sufficiently earlier than the effective U.S. filing date and any foreign priority date so that the month of publication is not an issue.

12/23/2005 MWLANCU 00000002 033975 10761938

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Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This Information Disclosure Statement is being filed more than three months after the filing date of a national application other than a continued prosecution application under 37 C.F.R. §1.53(d), or more than three months after the date of entry of the national stage as set forth in 37 C.F.R. §1.491 in an international application, and after the mailing date of the first Office Action on the merits, but before the mailing date of any of a Final Action under 37 C.F.R. §1.113, a Notice of Allowance under 37 C.F.R. §1.311, or an action that otherwise closes prosecution in the application. 37 C.F.R. §1.97(c). Please charge the \$180.00 fee [37 C.F.R. 1.17(p)] to Deposit Account No. 03-3975. In addition, please charge any fee deficiencies, or credit any overpayment, to Deposit Account No. 03-3975 as needed to ensure consideration of the Information Disclosure Statement. A duplicate copy of this paper is attached.

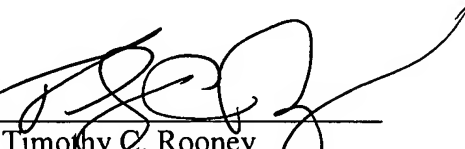
A copy of each cited U.S. patent is not submitted herewith pursuant to the Official Gazette Notice of August 5, 2003, wherein the Office waived the requirement under 37 C.F.R. 1.98(a)(2)(i) for all U.S. national phase applications filed after June 30, 2003.

It is respectfully requested that the Examiner initial and return a copy of the enclosed  
PTO-1449.

Respectfully submitted,

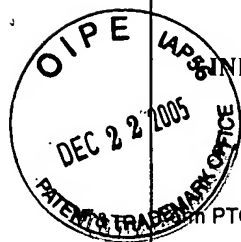
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Dated: December 22, 2005



<b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b> PTO-1449		Docket Number	Application Number
		016472-0311710	10/761,938
		Applicant(s)	
		Soheil SHAMS <i>et al.</i>	
		Filing Date	Group Art Unit
		January 21, 2004	2625

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*EXAMINER INITIAL	REF	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	1A	4,550,084	10/29/1985	Nelson <i>et al.</i>	436	45	
	1B	4,641,528	02/10/1987	Clayland, Jr. <i>et al.</i>	73	597	
	1C	5,121,320	06/09/1992	Aoki <i>et al.</i>	364	413.01	
	1D	5,134,662	07/28/1992	Bacus <i>et al.</i>	382	6	
	1E	5,202,932	04/13/1993	Cambier <i>et al.</i>	382	8	
	1F	5,273,632	12/28/1993	Stockham <i>et al.</i>	204	180.1	
	1G	5,389,792	02/14/1995	DiMarzio <i>et al.</i>	250	370.06	
	1H	5,417,923	05/23/1995	Bojanic <i>et al.</i>	422	101	
	1I	5,541,064	07/30/1996	Bacus <i>et al.</i>	435	6	
	1J	5,552,270	09/03/1996	Khrapko <i>et al.</i>	435	6	
	1K	5,560,811	10/01/1996	Briggs <i>et al.</i>	204	451	
	1L	5,580,728	12/03/1996	Perlin	435	6	
	1M	5,581,631	12/03/1996	Ortyn <i>et al.</i>	382	128	
	1N	5,583,973	12/10/1996	DeLisi <i>et al.</i>	395	120	
	1O	5,680,514	10/21/1997	Shams	395	22	
	1P	5,695,937	12/09/1997	Kinzler <i>et al.</i>	435	6	
	1Q	5,732,277	03/24/1998	Kodosky <i>et al.</i>	395	800	
	1R	5,757,954	05/26/1998	Kuan <i>et al.</i>	382	133	
	1S	5,773,218	06/30/1998	Gallatin <i>et al.</i>	435	6	
	1T	5,777,888	07/07/1998	Rine <i>et al.</i>	364	496	
	1U	5,785,658	07/28/1998	Benaron <i>et al.</i>	600	473	
	1V	5,811,517	09/22/1998	Gallatin <i>et al.</i>	530	350	
	1W	5,837,475	11/17/1998	Dorsel <i>et al.</i>	435	7.1	

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							YES	NO
	1X	WO 01/16860	03/08/2001	International				

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	1Y	BIO001 - M. BURL, "Recognition of Visual Object Classes", <u>Jet Propulsion Laboratory</u> , V-0105, March 30, 1996, 12 pages.
	1Z	BIO002 - M. TAINE and A. HERMENT, "Extraction of Heart and Vessel Walls on Ultrasound Images Using Snake-Splines", <u>SPIE</u> , Volume 2434, March 1995, pages 808-816.
	1AA	BIO003 - M. JOLLY, S. LAKSHMANAN and A. JAIN, "Vehicle Segmentation and Classification Using Deformable Templates", <u>IEEE</u> , Volume 18, No. 3, March 1996, pages 293-305.
	1BB	BIO004 - Y. AMIT and A. KONG, "Graphical Templates for Model Registration", <u>IEEE</u> , Volume 18, No. 3, March 1996, pages 225-236.

EXAMINER	DATE CONSIDERED
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.	

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*EXAMINER INITIAL	REF	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	2A	5,851,769	12/22/1998	Gray <i>et al.</i>	435	6	
	2B	5,853,979	12/29/1998	Green <i>et al.</i>	435	5	
	2C	5,865,975	02/02/1999	Bishop	204	618	
	2D	5,869,262	02/09/1999	Gallatin <i>et al.</i>	435	7.1	
	2E	5,876,933	03/02/1999	Perlin	435	6	
	2F	5,880,268	03/09/1999	Gallatin <i>et al.</i>	530	387.3	
	2G	5,887,074	03/23/1999	Lai <i>et al.</i>	382	128	
	2H	5,916,747	06/29/1999	Gilchrist <i>et al.</i>	435	6	
	2I	5,945,284	08/31/1999	Livak <i>et al.</i>	435	6	
	2J	5,945,679	08/31/1999	Dorsel <i>et al.</i>	250	458.1	
	2K	5,970,164	10/19/1999	Bamberger <i>et al.</i>	382	128	
	2L	5,980,096	11/09/1999	Thalhammer-Reyero	364	578	
	2M	5,981,190	11/09/1999	Israel	435	6	
	2N	5,989,835	11/23/1999	Dunlay <i>et al.</i>	435	7.2	
	2O	6,040,176	03/21/2000	Gallatin <i>et al.</i>	435	326	
	2P	6,054,270	04/25/2000	Southern	435	6	
	2Q	6,100,383	08/08/2000	Gallatin <i>et al.</i>	530	387.3	
	2R	6,103,479	08/15/2000	Taylor	435	7.2	
	2S	6,127,129	10/03/2000	Corn <i>et al.</i>	435	6	
	2T	6,150,179	11/21/2000	Went	436	173	
	2U	6,185,561	02/06/2001	Balaban <i>et al.</i>	707	6	
	2V	6,207,958	03/27/2001	Giakos	250	385.1	
	2W	6,222,093	04/24/2001	Marton <i>et al.</i>	800	3	

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	2AA	BIO008 - M. KASS, A. WITKIN and D. TERZOPOULOS, "Snakes: Active Contour Models", International Journal of Computer Vision, 1998, pages 321-331.

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	3B	6,226,542	05/01/2001	Reisfeld	600	407	
	3C	6,245,517	06/12/2001	Chen <i>et al.</i>	435	6	
	3D	6,251,601	06/26/2001	Bao <i>et al.</i>	435	6	
	3E	6,263,092	07/17/2001	Roehrig <i>et al.</i>	382	128	
	3F	6,263,287	07/17/2001	Zheng <i>et al.</i>	702	20	
	3G	6,301,378	10/09/2001	Karssemeijer <i>et al.</i>	382	132	
	3H	6,303,301	10/16/2001	Mack	435	6	
	3I	6,308,170	10/23/2001	Balaban	707	3	
	3J	6,341,256	01/22/2002	Deem <i>et al.</i>	702	19	
	3K	6,345,115	02/05/2002	Ramm <i>et al.</i>	382	133	
	3L	6,349,144	02/19/2002	Shams (020,155)	382	129	
	3M	6,362,004	03/26/2002	Noblett	436	43	
	3N	6,362,832	03/26/2002	Stephan <i>et al.</i>	345	629	
	3O	6,381,058	04/30/2002	Ramm <i>et al.</i>	359	242	
	3P	2002/0052882	05/02/2002	Taylor	707	104.1	
	3Q	6,389,428	05/14/2002	Rigault <i>et al.</i>	707	104.1	
	3R	6,441,973	08/27/2002	Ramm <i>et al.</i>	359	778	
	3S	6,453,241	09/17/2002	Bassett, Jr. <i>et al.</i>	702	19	
	3T	6,462,187	10/08/2002	Bandaru	536	23.2	
	3U	6,470,277	10/22/2002	Chin <i>et al.</i>	702	19	
	3V	6,475,736	11/05/2002	Stanton, Jr.	435	6	
	3W	6,498,690	12/24/2002	Ramm <i>et al.</i>	359	778	

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	3Z	BIO011 - S. SHAMS, "Translation-, Rotation-, Scale-, and Distortion-Invariant Object Recognition Through Self-Organization", <u>International Journal of Neural Systems</u> , Volume 8, No. 2, April 1997, pages 173-179.

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	4B	6,537,749	03/25/2003	Kuimelis <i>et al.</i>	435	6	
	4C	6,544,790	04/08/2003	Sabatini	435	455	
	4D	6,553,317	04/22/2003	Lincoln <i>et al.</i>	702	20	
	4E	2003/0100995	05/29/2003	Loraine <i>et al.</i>	702	19	
	4F	6,577,956	06/10/2003	Shams	702	19	
	4G	6,591,196	07/08/2003	Yakhini <i>et al.</i>	702	28	
	4H	2003/0148295	08/07/2003	Wan <i>et al.</i>	435	6	
	4I	6,632,600	10/14/2003	Short	435	4	
	4J	6,633,659	10/14/2003	Zhou	382	129	
	4K	6,673,549	01/06/2004	Furness <i>et al.</i>	435	6	
	4L	6,674,882	01/06/2004	Shams	382	129	
	4M	6,683,455	01/27/2004	Ebbels <i>et al.</i>	324	309	
	4N	6,690,399	02/10/2004	Carlson <i>et al.</i>	345	771	
	4O	6,714,925	03/30/2004	Barnhill <i>et al.</i>	706	48	
	4P	6,731,781	05/04/2004	Shams <i>et al.</i>	382	129	
	4Q	6,760,715	07/06/2004	Barnhill <i>et al.</i>	706	16	
	4R	6,789,069	09/07/2004	Barnhill <i>et al.</i>	706	12	
	4S	6,839,454	01/04/2005	Park	382	128	

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							YES	NO

### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	4T	BIO012 - Yidong CHEN <i>et al.</i> , "Ratio-Based Decisions and the Quantitative Analysis of cDNA Microarray Images", <u>Journal of Biomedical Optics</u> , Volume 2, No. 4, October 1997, pages 364-374.
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### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

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5B	BIO017 - M. SCHENA, D. SHALON, R. HELLER, A. CHAI, P. O. BROWN, and R. W. DAVIS, "Parallel Human Genome Analysis: Microarray-based Expression Monitoring of 1000 Genes", <i>Proc. Natl. Acad. Sci. U.S.A.</i> , Volume 93, No. 20, October 1996, pages 10614-10619.
5C	BIO018 - SCHENA, "Genome Analysis with Gene Expression Microarrays", <i>BioEssays</i> , Volume 18, No. 5, January 3, 1996, pages 427-431.
5D	BIO019 - LEMIEUX, AHARONI, and SCHENA, "Overview of DNA Chip Technology", <i>Molecular Breeding</i> , 1998, pages 277-289.
5E	BIO020 - SCHENA, HELLER, THERIAULT, KONRAD, LACHENMEIER, and DAVIS, "Microarrays: Biotechnology's Discovery Platform for Functional Genomics", <i>Tibtech</i> , Volume 16, July 1998, pages 301-306.
5F	BIO021 - HELLER, SCHENA, CHAI, SHALON, BEDILION, GILMORE, WOOLLEY, and DAVIS, "Discovery and Analysis of Inflammatory Disease-Related genes using cDNA Microarrays", <i>Proc. Natl. Acad. Sci. USA</i> , Volume 94, March 1997, pages 2150-2155.
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5J	BIO025 - ArrayIt, "Micro-Spotting Device for a Broad Range of Microarray Manufacturing Applications", <i>Chip Maker 3 Handbook</i> , December 8, 1998, 8 pages.
5K	BIO026 - ArrayIt, "High-Throughput Purification of PCR Products for DNA Microarrays, Sequencing and Other Applications in Genomics", <i>96 &amp; 384 Well PCR Purification Kits</i> , 4 pages.
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	6B	BIO029 - ArrayIt, "An Advanced Mixture of Salts, Detergents and Buffering Components...", <u>UniHyb Hybridization Solution Handbook</u> , 1998, 8 pages.					
	6C	BIO030 - ArrayIt, <u>Dye Terminator Clean-Up Kits Handbook</u> , 1998, 13 pages.					
	6D	BIO031 - M-L. T. LEE, F. C. KUO, G. A. WHITMORE, J. SKLAR, "Importance of Replication in Microarray Gene Expression Studies: Statistical Methods and Evidence from Repetitive cDNA Hybridizations", <u>Proceedings of the National Academy of Science</u> , Volume 97, No. 18, August 29, 2000, pages 9834-9839.					
	6E	BIO032 - Yee Hwa YANG, M. J. BUCKLEY, Sandrine DUDOIT, T. P. SPEED, "Comparison of Methods for Image Analysis on cDNA Microarray Data", <u>Technical Report #584</u> , Department of Statistics, University of California, Berkeley, 2000, 40 pages.					
	6F	BIO033 - R. ADAMS and L. BISCHOF, "Seeded Region Growing", <u>IEEE Transactions on Pattern Analysis and Machine Intelligence</u> , Vol. 16, No. 6, June 1994, pages 641-647.					
	6G	BIO034 - I. H. WITTEN and E. FRANK, "Data Mining, Practical Machine Learning Tools and Techniques with Java Implementations", Morgan Kaufmann Publishers, 2000.					
	6H	BIO035 - DeRISI <i>et al.</i> , "Exploring the Metabolic and Genetic Control of Gene Expression on a Genomic Scale", <u>Science</u> , Volume 278, October 24, 1997, pages 680-686.					
	6I	BIO036 - FUREY <i>et al.</i> , "Support Vector Machine Classification and Validation of Cancer Tissue Samples Using Microarray Expression Data", <u>Bioinformatics</u> , Volume 16, No. 10, 2000, pages 906-914.					
	6J	BIO039 - SCHUTZ <i>et al.</i> , "Spreadsheet Software for Thermodynamic Melting Point Prediction of Oligonucleotide Hybridization With or Without Mismatches", <u>BioTechniques</u> , Volume 27, No. 6, 1999, pages 1218-1222.					
	6K	BIO040 - 60/306,033, 2 pages.					
	6L	BIO041 - 60/276,947, 1 page.					

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	7D	BIO045 - "The ArrayExpress Database", European Bioinformatics Institute, August 2000, 2 pages.					
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<b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b>  Form PTO-1449				Docket Number		Application Number	
				016472-0311710		10/761,938	
				Applicant(s)			
				Soheil SHAMS <i>et al.</i>			
				Filing Date		Group Art Unit	
January 21, 2004		2625					
<b>U.S. PATENT DOCUMENTS</b>							
*EXAMINER INITIAL	REF	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
<b>FOREIGN PATENT DOCUMENTS</b>							
	REF	DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translations YES NO
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### FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translations	
							YES	NO

### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	9A	BIO069 – <a href="http://www.stratagene.com/products/displayProduct.aspx?pid=527">http://www.stratagene.com/products/displayProduct.aspx?pid=527</a> , 7 pages.
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	9F	BIO074 – XIANG <i>et al.</i> , "cDNA Microarray Technology and Its Applications", <i>Biotechnology Advances</i> , Volume 18, 2000, pages 35-46.
	9G	Non-Final Office Action mailed August 17, 2004 in U.S. Application No. 10/256,101, 11 pages.
	9H	Final Office Action mailed May 19, 2005 in U.S. Application No. 10/256,101, 16 pages.
	9I	Non-Final Office Action mailed November 4, 2005 in U.S. Application No. 10/256,101, 13 pages.

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